## CLAIMS

1. A method of producing a cross-linked polymeric support having a multimodal pore structure, which method comprises the steps of

(a) providing a degradable initiator molecule;

(b) providing an organic phase, which comprises said initiator molecule, one or more radically polymerisable monomers and a porogen in a solvent, and an aqueous phase, which comprises a transition metal catalyst;

(c) forming a suspension of the organic phase and the aqueous phase;

(d) starting a suspension polymerisation of the organic phase in the aqueous phase by adding a ligand, which co-ordinates to the transition metal in the aqueous phase via at least one atom, to produce a cross-linked polymeric support having a primary pore structure and comprising initiator molecule; and

(e) subjecting the support obtained from step (d) to degrading conditions to at least partially remove the initiator molecule from within the support to produce a cross-linked polymeric support having a secondary pore structure in addition to the primary pore structure.

2. A method according to claim 1, wherein the initiator molecule is a macroinitiator.

3. A method according to claim 1 or 2, wherein step (a) comprises to react a compound that comprises at least one hydroxy group, primary amine group or secondary amine group with an alfa-haloacyl halide.

4. A method according to claim 3, wherein a hydroxy-functional dendritic polyester is reacted with the alfa-haloacyl halide.

5. A method according to claim 3, wherein an amino-functional dendritic polyamide is reacted with the alfa-haloacyl halide.

6. A method according to any one of the preceding claims, wherein in step (d), the organic phase comprises up to about 50%, such as about 30%, of the initiator molecule, calculated as weight/weight monomer.

7. A method according to any one of the preceding claims, wherein the monomers are synthetic mono and/or multifunctional monomers, such as styrene and/or divinyl benzene.

8. A method according to any one of the preceding claims, wherein the transition metal is selected from the group that consists of Cu, Ni, Pd, Ru and Fe.
9. A method according to any one of the preceding claims, wherein the ligand comprises one or more N, O, P, S or C atoms that co-ordinated to the transition metal to form a catalyst system.
10. A method according to any one of the preceding claims, wherein the removal according to step (e) is performed under basic or acidic conditions.
11. A method according to any one of the preceding claims, wherein the removal according to step (e) is performed by applying an external agent, such as heat and/or radiation and/or ultrasound.
12. A method of producing a cross-linked polymeric support comprising one functionality within a primary pore structure and one functionality within a secondary pore structure, which comprises a method according to any one of the preceding claims and an additional step of selective surface modification of the supports so obtained after step (d) but before step (e).
13. A method according to claim 12, wherein the surface of the support obtained from step (d) is modified using conditions that have no essential impact on the initiator molecule present in the support.
14. A method according to any one of the preceding claims, wherein the secondary pore size is controlled by the molecular weight of the initiator molecule.
15. A cross-linked porous polymeric support, which has been produced according to any one of claims 1-14.
16. A polymeric support according to claim 15, which is comprised of one or more essentially spherical particles having a diameter of about 10μm and 250μm, wherein the specific surface area is in a range of 150-300 $m^2/g$.
17. A polymeric support according to claim 15, which is a monolith.
18. A polymeric support according to any one of claims 15-17, which comprises functional groups, such as chromatography ligands, coupled to the surface of the primary pores and/or the secondary pores.

19. Use of a polymeric support according to any one of claims 15-18 as a matrix in chromatography.